NEW OR NOTEWORTHY NORTH AMERICAN FUNGI

John Dearness

1. **Valsa clavigera** Dearn. & Barth.

Stromata cortical, removable with the bark and leaving no discoloration on or in the subjacent wood; thickly gregarious, or subseriately arranged, pustulate, hemispheric, .75–1.5 mm., mostly 1 mm., in diam. Perithecia black, 5–15 mostly 8–11 in a stroma, circinate immediately under the epidermis, globose, .3–.4 mm., with clavate ostiola .5–.7 mm. long, 90 μ across neck, 180 μ across head, crowded, and usually obliterating the pale disk. Asci subglobose to fusoid, 27–40 μ. Sporidia conglobate to obliquely biseriate allantoid, 9×2.5 μ.

On dead branches of *Schizonotus discolor* (Ph.) Raf., Bremerton, Wash., July, 1912. *Bartholomew, 4782.* Type collection, Fungi Columb. *5099.*

This is different from, although near *V. opulifolia* Peck, with authentic specimens of which it has been compared.

What appears to be this species (*V. clavigera*) on fire-killed *Acer macrophyllum* Ph. in the same locality has larger stromata with more numerous perithecia. This form is distributed in Fungi Columb. *5098.*

2. **Diatrypella minutispora** sp. nov.

Stromata scattered, gregarious, or seriate, small, mostly about 1 mm. at base, nearly superficial on the cortex, not blackening the subjacent tissues, rupturing the epidermis into very narrow, often elongate clefts. Perithecia black on a brownish, expanded, basal stroma, .2 mm. but variable in size and shape, rough, shining above, truncate-conic in the best developed examples, 3 to 5 in a stroma; ostiola short, obtuse, perforate. Asci stipitate—stipe sometimes half the total length, sp. p. obtuse-fusoid, 60–75 $\times$ 12 μ;

[1] Acknowledgments for opportunity to examine type and co-type specimens or for citations of literature are due to Dr. H. D. House, Dr. R. E. Stone, Dr. F. J. Seaver, and Mr. C. G. Lloyd.

paraphyses linear, looking as though they contained a line of spores, sometimes twice as long as the asci. Sporidia innumerable, hyaline, very minute, straight or somewhat curved, 3–3.5 × .5–.7 μ.

On dead branches of *Corylus rostrata* Ait., Washington Co., N. Y., June, 1916. *S. H. Burnham, 89.*

Diaporthe tessera Fr. is mixed with it in the type material. In several particulars this agrees with the European *D. Tocciaeana* de Not., a species which Dr. Peck reported on hazel at Sandlake, N. Y.; but the latter is said to exhibit a dark circumscribing line and to have brownish sporidia, 5–7 × 1.5 μ.

3. BOTRYOSPHAERIA SUMACHI Cooke, Grevillea **15**: 80. 1887

Sphaeria Sumachi Schw., Syn. N. Am. Fungi *1425*. 1832.
Sphaeropsis Sumachi (Schw.) Cooke & Ellis.
Haplosporella Sumachi (Schw.) Ellis & Ev., N. Am. Pyrenom. 744. 1892.

Mr. S. H. Burnham's *125* on *Rhus glabra,* Warren Co., N. Y., is ascigerous—a *Botryosphaeria* whose stromata externally and in cross section are exactly like Prof. Peck's W. Albany collection on the same host labeled *Sphaeropsis Sumachi* (Schw.) Cooke & Ellis. The latter is really a *Haplosporella* consisting as it does of flat, black stromata containing 2–8 internally white pycnidia, 75–90 μ. The former shows both the brown conidia of the latter and thick-walled asci containing eight hyaline, fusoid sporidia 18–20 × 6–8 μ. It may be another of the numerous forms of *Botryosphaeria fuliginosa* (M. & N.) but the perithecia are not botryoidally aggregated and the asci and sporidia are smaller. Cfr. *Haplosporella Burnhami* sp. nov. on a subsequent page.

My copy of Fungi Columb. *1053* labelled *Sphaeropsis Sumachi* (Schw.) is not a *Haplosporella.* The spores are larger and usually contain a single large nucleus instead of the usual two nuclei of *Haplosporella Sumachi.*

4. SPHAERELLA TRICHOPHILA Karst. f. *Saxifragae*

This *Sphaerella* has characters connecting it with *S. minor* Karst. and with *S. pachyasca* Rostr. both of which inhabit *Saxi-*

fraga in Greenland. But the bristles near the vertex, the brown subiculum and the fruit characters bring it closer to *S. trichophila* Karst. The last inhabits species of *Pedicularis* in West Greenland. *Saxifraga* seems to be a new host for it. Rostrup found the sporidia on *Pedicularis* 20–25 × 6–7 μ; this has asci 45–62 × 15–16 μ and sporidia 15–18 × 5–6 μ.

On *Saxifraga Nelsoniana* D. Don., Camden Bay, northern Alaska. *F. Johansen,* Can. Arc. Exped., June, 1914.

5. **Venturia subcutanea** sp. nov.

Perithecia membranaceous, nearly black, gregarious, erumpent through or covered by the loosened cuticle, hypophyllous, attached to a subicle of septate, branching, brown fibrils, 4–20 μ thick, making orbicular spots 1–4 mm. in diameter; hardly visible on the upper side of the leaf but opaque when held to the light. Some of the perithecia bearing few to 10 short, rigid, brown bristles near the stoma, others smooth; plano-globose to conic, 90–150 μ. Asci 8-spored, aparaphysate, often broadest near the base, 54–66 × 10–15 μ, the walls 2 μ thick. Sporidia 1-septate, fuliginous, often biseriate in the lower half, 15–17 × 4.5–6 μ.

On dead leaves of *Salix reticulata* L., Kongengevik, N. Alaska, June, 1914. *F. Johansen, 63 b,* Can. Arc. Exped.

This variable species was sought in lists of *Sphaerella, Asterina* and *Venturia.* The perithecia attached to the cuticle seem to lack the bristles while those that are free from it but covered by it possess them.

6. (?)**Myrmaecium Cannae** Dearn. & Barth. sp. nov.

Stromata minute, mostly about .25 mm., largest 1 mm., scattered over the leaf, erumpent on both sides but mostly hypophyllous, blackened by the perithecia. Perithecia black, one to several in a stroma, 17 the largest number counted in one stroma, globose to truncate-conic, 90–180 μ. Ostiola short, blunt, black, shining. Asci short-stipitate, 60–90 × 6–10 μ; paraphyses linear, some of them branched. Sporidia hyaline, 1-septate, upper cell larger, 10–15 × 4–8 μ. Some of the perithecia filled with conidia and sporophores; conidia linear-oblong, obscurely 1-septate, 15 × 2.5–3 μ.

On withered leaves of *Canna Indica* L., Cabo Rojo, Porto Rico, Oct., 1912. *F. L. Stevens.* Ex herb. Bartholomew *303.* Type collection, Fungi Columb. *5038.*

7. **Diaporthe exiguestroma** sp. nov.

Stromata minute, scattered, seated in the unaltered cortex, not reaching the wood, no circumscribing line, circularly rupturing the epidermis, mostly about .3 mm. in diameter. Perithecia one, two or three in a stroma, white in cross-section, .1–.2 mm.; ostiola when visible short, blunt. Asci comparatively few in a perithecium 75–90 × 15 μ, paraphysate. Sporidia subbiseriate hyaline, uniseptate, constricted, quadrinucleate, straight or slightly curved, ends rounded, 18–24 × 6–7 μ.

On dead stems of wild rose, *Rosa* sp. Vancouver Island, July, 1916, *John Macoun, 923.*

8. DIAPORTHE OXYSPORA (Peck) Sacc.

Valsa oxyspora Peck, Ann. Rep. N. Y. State Mus. **28**: 75. 1876.
Valsa ocularia Cooke & Ellis, Grevillea **6**: 11. 1877.
Diaporthe epimicta Ellis & Ev. N. Am. Pyrenom. 439. 1892.

Comparison of the type of *D. oxyspora* (Peck) Sacc. with specimens named respectively *D. ocularia* and *D. epimicta* by Mr. Ellis and some recent collections leads to the conclusion that these names are synonyms. Of my *1645* found on *Ilex* in 1890 which Mr. Ellis first took to be a *Diatrype,* he later wrote that it was a new species which he proposed to name from *epimiktos*—confused—separating it from *D. ocularia* on account of the appendiculation of its sporidia. The appendages are not, however, constant or persistent, for I have specimens from a single brush pile of *Ilex,* showing them to be distinct or obscure or lacking. Prof. Peck's type was reported "on oak limbs" but Dr. H. D. House has found that the host material was *Nemopanthes.*

9. **Protoventuria vancouverensis** sp. nov.

Perithecia scattered, carbonous, thin, globose to conic, bristly, 120–150 μ; bristles rigid, acuminate, pungent, 30–55 × 4–6 μ at base. Asci fusoid-cylindric, straight or curved, 45–55 × 14 μ; paraphyses linear, longer than asci, not abundant. Sporidia fuliginous, 2–3-seriate, uni-septate, bi- tri- or quadrinucleate, the upper cell wider than the lower one and often containing one large nucleus when the narrower, lower cell contains two, 14–15 × 4.5–5 μ.

On dead maple bark (*Acer* sp.). Vancouver Island, August, 1916, *John Macoun, 1003.*

10. MASSARINA DRYADIS Rostr. Meddel. Groenl. 3: 560. 1888.

Plants of *Dryas octopetala* (L.) much discolored were collected by Mr. F. Johansen, of the Can. Arc. Expedition, near the mouth of Coronation Gulf, July, 1916. The oldest and most sered leaves bore numerous, dark-brown, sphaeroid-depressed to conic, membranaceous, partially immersed perithecia containing asci and sporidia agreeing exactly with Rostrup's description. The ostiola, however, instead of being "niveo" were merely whitish and that only when more or less perforate. The sporidia—not reported by Rostrup—were mostly about 30 × 15 μ and the asci while mostly about 100 × 33 μ varied in length from 60 to 150 μ. Rostrup's fungus is listed in synopses of North American species of *Massaria* but if Mr. Johansen's plant is the same, and it probably is, the fungus is not a good *Massaria*.

11. **Leptosphaeria Gaultheriae** sp. nov.

Perithecia scattered, black, seated on the cortex and erumpent through the thin cuticle or quite superficial where the latter is thrown off, ovoid-conic to globose, 115–275 μ in diameter. Ostiola short, black, conic, shining. Asci broad-linear, 75–80 × 6.5–7 μ, paraphyses present, simple or divided. Sporidia pale brown, uniseriate, overlapping, 3-septate, larger in upper half, 12–16 × 5 μ.

On dead stems of *Gaultheria Shallon* Pursh, Vancouver Island, August, 1916, *John Macoun 980*.

12. **Asterina** (*Asterella*) **fumagina** Dearn. & Barth. sp. nov.

Perithecia epiphyllous, gregarious or nearly covering the leaf with a sooty layer resembling *Fumago;* seated on dichotomous, anastomosing mycelium of brown, septate hyphae, 5–6 μ thick; crowned with 1–3 pungent, dark-brown, rigid setae, 100–400 × 4–9 μ; rugose, dark-brown, globose, .3–.5 mm. in diam. Asci sessile, short-elliptic to pyriform, 45–60 × 25–30 μ, wall 3 μ thick, few to 10 in a perithecium. Sporidia hyaline, grumous-nucleate, clavate-oblong, 1-septate, variable in size, 15–25 × 8–12 μ, upper cell larger than the lower.

On living leaves of *Panicum latifolium* (?), Maricoa, Porto Rico, Jan., 1913, *F. L. Stevens*. Ex. Herb. of E. Bartholomew *190*.

13. LOPHIOSTOMA EXCIPULIFORME (Fr.) Ces. & DeNot. Comm. Soc. Crit. Ital. **1**: 219. 1863

"We have seen no American specimens of the normal form on bark of deciduous trees."—Ellis & Ev. N. Am. Pyrenom. *222*. Their variety *abietis* differs in having larger spores up to 75 μ and narrower ostiola. Mr. S. H. Burnham's *117* on maple bark collected at Hudson Falls, N. Y., agrees well with the description based on Rehm's *238*. The nearly superficial perithecia with prominent ostiola enlarged at the top, the 6–7 septate, non-constricted sporidia mostly about 33–35 × 9–10 μ with subhyaline end cells, leave no room to separate this from the European forms.

14. **Phacidium Gaultheriae** sp. nov.

Apothecia scattered, conspicuous by their dark color on the whitened stems of the host, stellately ruptured, .75–1.25 mm. The whitened areas upon which the apothecia are seated extend wholly or partially around the stem and are bounded by a raised line. Asci cylindric-clavate, 90–110 × 10–12 μ; paraphyses abundant, linear, some of them branched. Sporidia hyaline, grumous or uninucleate, obliquely uniseriate or sub-biseriate, 19–22 × 6–6.5 μ.

On living stems of *Gaultheria Shallon* Ph.; Vancouver Island; August, 1916, *John Macoun 978*.

15. HELVELLA SPHAEROSPORA Peck, Ann. Rep. N. Y. State Mus. **27**: 106. 1875. **31**: 59. 1879. **47**: 43. 1894. and Bull. **51**: 299. 1897

This rare and interesting species well marked by its globose spores was found in quantity on old sawdust heaps near the Ottawa River, June, 1917, by Mr. W. S. Odell. Dr. F. J. Seaver reports its recent collection by Prof. Orton in Vermont.

16. **Exoascus Aceris** Dearn. & Barth. sp. nov.

Spots subcircular or irregular, .5–1.5 cm., reddish-gray on the upper side, paler beneath, deciduous. Asci numerous, hypophyllous, short-clavate or cylindric, mostly about 30 × 9 μ. Sporidia hyaline, sub-globose or irregular, 4.5–6 × 3–4.5 μ.

On living leaves of *Acer grandidentatum* Nutt., Parley's Canyon, Utah, June, 1915. *Bartholomew* and *Garrett 5839*. Type collection, Fungi Columb. *5018*.

17. CALVATIA CRETACEA (Berk.) Lloyd, Myc. Notes 650, f. 929. 1917

Lycoperdon cretaceum Berk., Jour. Linn. Soc. **17**: 18, 1878.

Peridium subglobose, 4–5 cm., the prominent warts of the upper cortex gradually reduced on sides and base to a granular or pruinate layer; sterile base shallow, radicating; spores echinulate, average 6.2 μ, capillitium olive-brown, 12 μ thick, branches much smaller (6 μ).

Collected on the Can. Arc. Exped., 1913–'16, on tundra slopes of the Mackenzie Delta (*O'Neill*), and on Herschell Island and around Coronation Gulf. *F. Johansen.*

This would seem to be a common species in the tundra near 70° N. Lat. The spores show that it cannot be *C. coelata* Bull. which it otherwise approaches. The likely supposition that it might be *C. arctica* F. & W. was rejected on comparison with the details of warts, capillitium, basidia and spores given in the fine plate in Meddelelser om Groenland 43. I referred a description under the MS. name *C. borealis* to Mr. C. G. Lloyd who fortunately had examined and photographed Berkeley's imperfectly described *Lycoperdon crustaceum* collected in the Nares' Expedition. This with material from Lapland, per Thore C. E. Fries, enabled him to establish the above determination.

18. **Phyllosticta brunnea** Dearn. & Barth. sp. nov.

Spots ashy but receiving a brownish cast from the numerous pycnidia; immarginate, .5–1 cm. in diameter. Pycnidia epiphyllous, reddish-brown, very numerous, crowded, depressed, 90–150 μ. Conidia hyaline, oblong, 4–6 × .75–1 μ.

On languishing, yellowish leaves of *Populus angustifolia* Jas., Montrose, Colo., Oct. 1912. *E. Bartholomew 5001.* There are also on all the leaves darker, more opaque, sterile spots. Type collection, Fungi Columb. *5040.*

19. **Phyllosticta smilacina** (Peck) comb. nov.

Sphaeropsis smilacina Peck, Ann. Rep. N. Y. State Mus. **33**: 24. 1883.

Phoma smilacina (Peck) Sacc. Syll. Fung. **3**: 160. 1884.

Marcophoma smilacina (Peck) Berl. & Vogl. Sacc. Syll. **10**: 205. 1892.

Ascochyta Smilacis Ellis & Mart. Amer. Nat. **16**: 1002. 1882.
Stagonospora Smilacis (Ellis & Mart.) Sacc. Syll. Fung. **3**: 450. 1884.
Phyllosticta Smilacis Ellis & Mart. in Herb. 1898; in Ellis & Evrht.'s N. Amer. Phyllostictas 72. 1900.
Phyllosticta Smilacis Ellis & Ev. Bull. Torrey Bot. Club **27**: 572. 1900.

Prof. Peck described this species on *Smilax rotundifolia* as follows: "Spots orbicular, 2 to 3 lines broad, arid, whitish with a dark border; perithecia epiphyllous, subhemispherical or depressed, black, often disposed in a circle near the margin of the spot; spores oblong or subfusiform, colorless, .0008 in. to .0012 in. long, about .0003 in. broad."

Ellis & Ev. *op. cit.* "Perithecia epiphyllous, 110–150 μ; sporules oblong-fusoid, hyalin, mostly nucleate, subinequilateral, 12–15 $\times$ 3.5–4 μ" adding that it is found on various species of *Smilax* and varies considerably in the size and shape of the sporules.

There are before me specimens, including types or co-types, from over twenty widely separated collections bearing one or other of the above names. The spots are, except in Fungi Columb. *4247*, uniformly whitish becoming dingy near the rusty-brown, raised border. On a Niagara specimen out of one spot spores measured 9 $\times$ 6 μ, 10 $\times$ 5 μ, 15 $\times$ 8 μ and 18 $\times$ 6 μ. On a leaf of one of the type collections they ranged from 9 $\times$ 5.5 μ to 24 $\times$ 6 μ; in another spot on the same leaf they were pretty uniformly 7–9 $\times$ 6–7 μ. On the spots the pycnidia are mostly sub-circinate but often more or less scattered and mostly but not always epiphyllous. The sporules are sub-globose to oblong-fusoid or inequilaterally elliptic, hyaline, grumous, often nucleate, sometimes *appearing* septate, 7–24 $\times$ 4–8 μ, usually within 8–12 $\times$ 4–7 μ.

20. **Macrophoma Salicis** Dearn. & Barth. sp. nov.

Pycnidia thickly distributed, sometimes gregarious or seriate, cortical, rupturing the cuticle in a cleft or stellate manner, .25–.5 mm. in height and diam. Ostiola thick, short or longer up to .3 mm. Conidia hyaline, continuous, ovoid to oblong or fusoid, 12–16 $\times$ 6–9 μ.

On dead twigs of *Salix exigua* Nutt., Billings, Mont., Aug., 1913, *E. Bartholomew 5207*.

21. **Macrophoma ulmicola** Dearn. sp. nov.

Pycnidia thickly scattered, 1 per sq. mm., surrounding the branches, raising the epidermis into transversely ruptured pustules, immersed in the cortex, not reaching or discoloring the wood, globose, .3–.5 mm. in diameter, ostiola short, hardly visible through the ruptured epidermis. Conidia abundant, hyaline, granular, ovate, 18–30 × 15–18 μ, wall 2–2.5 μ thick, on short conidiophores.

On dead branches of *Ulmus americana* L., Hudson Falls, N. Y., March, 1916, *S. H. Burnham 126*.

Sometimes two or three pycnidia are confluent then suggesting *Dothiopsis* but they are normally and mostly single and separate.

22. **Cicinnobolus major** Dearn. & Barth. sp. nov.

Pycnidia amphigenous, amber-colored, sometimes so numerous as to impart their color to the whole surface of the leaf, on a dense, white mycelial subicle, limoniiform, 75–120 × 30–45 μ. Spores hyalin, continuous, 6–8 × 3 μ.

On *Oidium* on living leaves of *Grindelia squarrosa* (Ph.), Billings, Mont., Aug., 1913, *E. T. & E. Bartholomew 5024*. Type collection, Fungi Columb. *5007*.

C. Cesatii, fide Saccardo, has spores 2.5–3 × 1 μ.

23. **Sphaeropsis Diospyri** Dearn. & Barth. sp. nov.

Pycnidia seated in the dead cortex, .3–.4 mm., so closely clustered in some places as to cover the twig and suggest a *Haplosporella*. The white core around which the brown conidia tardily develop is Phoma-like and produces numerous minute hyaline spores. Conidia brown, 20–25 × 7–10 μ usually with a median nucleus that gives them the appearance of being septate.

On dead twigs of *Diospyros Virginiana* L., Shreveport, La., Oct., 1913, *E. Bartholomew 5458*. Type collection, Fungi Columb. *5088*.

24. **Sphaeropsis latispora** (Peck) sp. nov.

Sphaeropsis Smilacis Ellis & Ev. var. *latispora* Peck, Bull. N.Y. State Mus. **150**: 39. 1910.

Sphaeropsis Smilacis Ellis & Ev. is a *Melanconium.* Prof. Peck's var. on *Smilax hispida* founded on a collection by Dr. Fairman in Yates Co., N. Y., 1909, is a good *Sphaeropsis.* The pycnidia are thickly scattered, .25 mm. in diameter, minutely puncturing the epidermis. "Conidia 17–20 × 11–13 μ"—Peck. Exceptional spores vary from 12–25 μ in length and in shape from globose to oblong-elliptic. Collections examined, Kansas, 1906, *Bartholomew;* London, Ont., 1895, *Dearness;* Long Island, N. Y., 1916, *House.*

25. **Haplosporella Burnhami** sp. nov.

Stromata irregularly globose to linear, 2–10 mm. Pycnidia partly immersed, connate at base, their position indicated by narrow rifts in the bark, mostly about .2 mm. in diameter; ostiola various, a mere perforation or a cylindric or conic beak; flesh whitish at first, becoming gray. Conidia oblong-elliptic with rounded ends or pyriform, brown at maturity, 1–2-nucleate, 18–24 × 10–12 μ; conidiophores rather stout, some of them as long as the spores.

On dead stems of *Rhus Toxicodendron* var. *radicans* (L.,) Torr., Washington Co., N. Y., May, 1916, *S. H. Burnham 112.*

Sphaeropsis Sumachi (Schw.) Cooke & Ellis is described as having subconfluent perithecia in dark stromata,—so possibly it may be a *Haplosporella.* Mr. Burnham's material has been compared with specimens on *Rhus glabra* and *R. hirta* named *S. Sumachi* by Dr. Peck and by Mr. Ellis. There seems more difference in the specimens than is implied in the descriptions.

26. **Septoria samarae-macrophylli** Dearn. & Barth. sp. nov.

Spots conspicuous, reddish-brown, subcircular areas in the wings of the samarae, 2–5 mm. in diameter. Pycnidia pale, thin-walled, 80–120 μ. Sporules numerous, continuous or 1–2 septate, some of them minutely guttulate, 30–65 × 2–2.5 μ, less curved and thicker than in *S. aceris-macrophylli* Peck; spots quite distinct from those of *S. circinata* Ellis & Ev. and from *S. samarae* Peck on keys of *Acer negundo.*

On green samarae of *Acer macrophyllum* Ph., Duckabush River, Wash., Aug., 1912, *E. Bartholomew 4858.* Type collection, Fungi Columb. *5086.*

27. **Septoria Sarcobati** Dearn. & Barth. sp. nov.

Pycnidia nearly black, immersed in the somewhat reddened calyx wings, amphigenous, sometimes widely perforate, with the spores issuing in pale cirrhi; 90–200 μ in diam., wall thin. Sporules straight or curved, obtuse, 1-septate, 30–45 $\times$ 5–6 μ.

On calyx wings of *Sarcobatus vermiculatus* (Hook.) Torr., Tromberg, Mont., Sept., 1913, *E. Bartholomew 5324*.

28. (?) **Melasmia Menziesiæ** Dearn. & Barth. sp. nov.

Stromata externally black, reticulated over a yellowed area, .5–1 cm., epiphyllous, consisting of a whitish, pseudo-prosenchymatic layer about .3 mm. thick; the sporiferous tissue in radiating, narrow ridges. Conidia 3 $\times$ 1 μ or less on a basidial stratum 8–10 μ in depth.

On living leaves of *Menziesia ferruginea* Sm., Duckabush, Wash., Aug., 1912, *E. Bartholomew 4845*. Type collection, Fung Columb. *5035*.

29. **Leptothyrella Caricis** Dearn. & Barth. sp. nov.

Pycnidia carbonous, dimidiate, astomous, superficial, .2–.7 $\times$ .2–.3 mm. One or a few short bristles are found on an occasional pycnidium. Sporules hyaline, 20–25 $\times$ 3–4 μ, obscurely 1-septate, in some instances appearing 2–3-septate.

On withered leaves of *Carex stricta* Lam., Stockton, Kansas, May, 1913, *E. Bartholomew 5019*. Type collection, Fungi Columb. *5031*.

30. **Gloeosporium Ailanthi** Dearn. & Barth. sp. nov.

Spots circular, .5–1 cm., bordered, grayish-brown, similar beneath except that the border is not definite, often confluent, circinately ridged. What may be *Cercospora glandulosa* Ellis & Kellerm. is on the same spots. Acervuli epiphyllous, large, 180 μ, dark, waxy. Spores hyaline, oblong with rounded ends, some of them appearing septate probably due to grumous particles gathering towards the ends and leaving a clear space near the middle, 11–16 $\times$ 5–7 μ, mostly about 13 $\times$ 6 μ.

On living leaves of *Ailanthus glandulosa* Desf., Shreveport, La., Oct., 1913, *E. Bartholomew 5400* (b). Type collection, Fungi Columb. *5021*.

This possibly attacks the leaves only after they are weakened by the *Cercospora* which accompanies it.

31. **Gloeosporium Bartholomaei** sp. nov.

Spots numerous, sooty, quadrate, 1–3 mm. across, paler below but nearly similar, opaque when held to the light. Acervuli amphigenous but mostly epiphyllous, the spore-masses waxy, honey-colored, in crateriform ruptures of the epidermis. Spores fusoid, subacute, hyaline, the nucleation causing some of them to appear septate, 20–24 × 5.5–6 μ, extremes in length 15 to 30 μ, in width 4–6.5 μ.

On living leaves of *Ribes bracteosum* Dougl., Port Orchard, Wash., July, 1912, *E. Bartholomew 4763*. Type collection, Fungi Columb. *5022*.

32. **Gloeosporium Betae** Dearn. & Barth. sp. nov.

Spots circular, conspicuously circinate, dark-gray, sometimes confluent and then large areas of the leaves become sordid yellow, similar on both sides, .5–1 cm. Acervuli innate; even when their positions cannot be detected with the lens, sections in water usually give one or more oozing cirrhi of spores. Spores abundant, hyaline, minutely nucleate, 3.5–5 × 3–4 μ.

A typical *Gloeosporium* on living leaves of sugar beet, *Beta vulgaris* Willd., very destructive. Billings, Mont., Aug., 1913, *E. Bartholomew 5173*. Type collection, Fungi Columb. *5023*.

33. **Gloeosporium Crataegi** Dearn. & Barth. sp. nov.

Spots circular, white above with a diffuse, reddish border, reddish when held to the light and on the under side of the leaf, 2–3 mm. in diameter. Acervuli epiphyllous, circular (60–90 μ) to hysteriiform (.5–1.5 mm. by 60–100 μ), the sporiferous factors with the spores rupturing the cuticle and rising in a mass from .6 to 1 mm. above the level of the leaf. Conidia hyaline, often nucleate at each end, 4–6 × 2–3 μ.

On living leaves of *Crataegus brevispina* (Dougl.) Heller, Vancouver, Wash., Sept., 1912, *E. Bartholomew 4957*. Type collection, Fungi Columb. *5024*.

34. **Melanconium Smilacis** (Ellis & Ev.) comb. nov.

Sphaeropsis Smilacis Ellis & Ev. Jour. Myc. **5**: 149. 1889.

Examination of a portion of the type collection, H. J. Webber's

34, 1888, on *Smilax hispida* at Lincoln, Nebraska, fails to reveal any pycnidial wall. Irregular acervuli develop just beneath the cuticle rupturing it sometimes at more than one point. Conidia with nuclei half to three fourths of their size, oblong with rounded ends, 9–20 × 6–7 μ, mostly 16 × 6 μ, are mixed with enucleate, subinequilateral ones 7–10 μ wide.

35. **Marssonina bracteosa** Dearn. & Barth. sp. nov.

On arid, brownish areas of the leaves and discolored petioles, not definitely limited. Acervuli yellowish, epiphyllous, seated on the veins and veinlets, .1–.2 mm. Spores hyaline, in hemispheric masses, mostly 1-septate, some of them continuous or septum not discernible, 4–8 × 2–2.5 μ.

On living leaves of *Ribes bracteosum* Dougl., affected with *Gloeosporium Bartholomaei* Dearn., Fungi Columb. *5022*, the acervuli as well as the spores of the latter being much larger than those of the *Marssonina*. Port Orchard, Wash., July, 1912, *E. Bartholomew 4763* (a).

36. (?) SEPTOGLOEUM NUTTALLII HARK.

The following description was written out under the proposed name *Cylindrosporium Osmaroniae* sp. nov.; but it seems to be very close to *Septogloeum Nuttallii* Hark. Jour. Myc. 1: 117, if not identical with it.

An affected part of the leaf is somewhat paler than the adjacent area and when such part is held to the light and examined with a lens the acervuli are visible as opaque dots each surrounded by a narrow translucent ring. These may become confluent and appear as brown spots 2–3 mm. in diameter. Acervuli amphigenous but mostly hypophyllous, 50–100 μ in diameter, usually more prominent at the margin than in the center, yellowish, resembling young uredosori. Conidia hyaline, 1–several-septate, mostly 1-septate, usually multinucleate, subarcuate and subacute, 30–50 μ, mostly 45 × 3 μ.

On living leaves of *Osmaronia cerasiformis* (T. & G.) Greene, Vancouver Island, July, 1916, *John Macoun 933*.

37. **Septogloeum Schizonoti** sp. nov.

Spots numerous, irregular, scattered, dark-brown, 1–5 mm., mostly in indefinite areas that become orange or reddish and often extending over the whole leaf. Acervuli amphigenous but mostly epiphyllous, nearly concolorous, the larger ones with a prominent rim and depressed disc, 75–200 μ. Sporules hyaline, subarcuate, 30–45 × 5–7 μ, mostly 2-septate.

On living leaves of *Schizonotus discolor* (Pursh) Raf. Vancouver Island, August, 1916, *John Macoun 969.*

This may be only a variety of the preceding species.

38. **Septogloeum Salicis-Fendlerianae** Dearn. & Barth. sp. nov.

The spots are somewhat arid, subcircular areas, 2–4 mm., bounded by an unbordered, raised line, more distinct on the upper side of the leaf. Acervuli amphigenous but mostly epiphyllous, pycnidia-like in the younger stages but developing into circular, yellowish-hyaline depressions, 100–150 μ. Sporules hyaline, grumous, curved, mostly 1-septate, 15–50 × 3.5–6 μ, mostly about 45 × 5 μ.

On living leaves of *Salix Fendleriana* Anders., Caldwell, Idaho, Sept., 1912, *E. Bartholomew, 4968.* Type collection, Fungi Columb. *5085.* Many of the leaves in this collection bear numerous brown, angular spots which mark the areas occupied by the *Septogloeum.*

Fungi Columb. *3779* and *4387* are this species. It is quite distinct from *Septogloeum salicinum* (Peck) Sacc.; indeed it comes nearer *Cylindrosporium salicinum* (Peck) Dearn.

39. **Cylindrosporium Artemisiæ** Dearn. & Barth. sp. nov.

Spots brown, angular, following the veins, becoming confluent, indistinctly visible through the tomentum on the lower side of the leaf. Acervuli numerous, epiphyllous, concolorous, 60–90 μ. Sporules hyaline, subclavate, subflexuous, 1–5-septate, 20–50 × 3–4 μ.

On living leaves of *Artemisia Suksdorfii,* Piper, Pleasant Beach, Wash., August, 1912, *E. Bartholomew, 4892.* Type collection, Fungi Columb. *5010.*

40. **Cylindrosporium salicinum** (Peck) comb. nov.

Septoria salicina Peck. Ann. Rep. N. Y. State Mus. **25**: 87. 1873.
Septoria albaniensis Thüm. Bot. Gaz. **5**: 122. 1880.
Phleospora Dearnessii Sacc. 1914.

In Mycologia 8: 105, I drew attention to the confusion in the names of *Cylindrosporium* on *Rhus* spp. due to the wide variation in size of the spores and the uncertainty as to whether they are formed in a true pycnidium.

Similar confusion obtains in respect to the names of species parasitic on the leaves of *Salix* spp. which in my own herbarium is labelled *Cylindrosporium salicinum* Ellis & Ev. sp. nov. in litt., Sept., 1892. This name was not published because the late Mr. J. B. Ellis on further study concluded that it "was too near *Septoria albaniensis* Thüm." In 1873 Prof. Peck published *Septoria salicina,* on *Salix lucida,* Ann.Rep. N. Y. State Mus. **25**: 87. 1873. *Septoria albaniensis* Thüm., on *Salix lucida* was published in Bot. Gaz., Oct., 1880. Careful comparison of authentic material—types or co-types—of the foregoing failed to reveal a satisfactory means of distinguishing them.

Co-type of *Phleospora Dearnessii* Sacc., on *Salix nigra,* published in 1914, Ann. Myc. **12**: 299, cannot be separated with certainty from the preceding. Dr. Saccardo remarked that this species verges on *Marssonia,* but the sporules favor *Phleospora* and further that it may not be different from *Septoria albaniensis* Thüm. and *S. salicina* Peck, the descriptions of which are inadequate for a decision. In the apparently earlier stages their discolorous pustules bear a resemblance on the surface to pycnidia but finally they become nearly concolorous and are visible as circular depressions or cavities rupturing usually, not always, through the lower cuticle of the leaf.

Fungi Columb. *3872,* incorrectly labeled *Septogloeum salicinum* (Peck) Sacc., has somewhat larger sporules and some of the spots are larger and conspicuously circinated or mottled. The differences, taking a large number of specimens into account, are insufficient for a new form-species. It might, however, pass for a variety, say var. *circinatum.*

The form in Fungi Columb. *3779* and *4387*, both on *Salix Fendlieriana*, incorrectly labeled *Septoria Salicis* West., differs from all the preceding in its larger sporules. It is less distinctly maculate and almost completely epiphyllous. (*Septogloeum Salicis-Fendlerianæ* sp. nov.)

Examination and comparison of all the available material seems to justify the following determinations:

Cylindrosporium salicinum (Peck) Dearness (=*Septoria salicina* Peck on *Salix lucida*. Acervuli mostly hypophyllous, on arid centers of spots; sporules about 38 × 3–3.25 μ, obscurely 1–3 septate. Ellis & Ev. N. Am. Fungi, *2646, 3064, 3369;* Fungi Columb. *284, 2081.*

f. *albaniensis* (Thüm.) on *Salix lucida*. Maculæ less distinct; sporules usually straight about 33 × 2.75–3 μ. Seym. & Earle Ec. Fungi *197;* Fungi Columb. *1346.*

var. **circinatum** var. nov. on *Salix lucida*. Maculæ .5–1.5 cm. mostly circinate or mottled; sporules 40 × 3–3.5 μ. This is Fungi Columb. *3872.*

Septoria Salicis West., as exhibited in Roumeguère's Fungi Gallici *3843,* and *S. salicicola* Sacc., in de Thümen's Myc. Univ. *1993,* have true pycnidia and are quite different from any American species of *Septoria* on willow that I have seen. In both, the spots are small, about 1 mm., the pycnidia nearly black and mostly epiphyllous.

In this connection it may be worth while to report briefly the results of the examination of three other allied form-species on willow leaves. See No. 41.

41. GLOEOSPORIUM SALICIS West. Fungi Columb. *855, 4122;* N. Am. Fungi *2441.*

Supplementary to description in Jour. Myc. 1: 113. 1885.

Maculae numerous, small, angular, acervuli epiphyllous. Sporules 15–23 × 7.5–10 μ mostly 2-nucleate.

Gloesosporium boreale Ellis & Ev. on *Salix cordata* Fungi Columb. *682*; N. Am. Fungi *3279.*

Supplementary to Proc. Acad. Phila. 1893: 459. 1893.

Acervuli hypophyllous. Spores issue in cirrhi, simple, 7–12 × 1.5–2 μ.

Septogloeum salicinum (Peck) Sacc.
(*Gloeosporium* Peck). On *Salix sericea.*

Supplementary to the description in Ann. Rep. N. Y. State Mus. 33: 26. 1883.

The indefinite, "arid," spore-producing parts seem to develop from precedent, dull-purplish areas. Acervuli hypophyllous, irregularly rupturing the cuticle and delivering the spores in yellowish heaps rather than in cirrhi. Sporules grumous, or granular, no nucleate ones observed, 10–50 × 3–6 μ mostly about 45 × 5 μ, continuous or 1.3 septate, mostly 1-septate, the proximal half rounded on the end, 4–6 μ thick, the other half acuminate to a subacute point and curved.

Septogloeum maculans Hark. on *Salix lasiolepis.*

Jour. Myc. 1: 117. This is quite distinct and seems to be the conidia of a dark, radiating fungus in the interior of the leaf.

42. **Cryptosporium candidum** nom. nov.

A species of *Cryptosporium* on *Abies* was published in *Mycologia* 8: 107 under the preoccupied name *C. falcatum.* It is hereby changed to *C. candidum.* The name refers to the white flecks of exuded spore-masses on the dark bark of the host which draw attention to the presence and location of the fungus.

43. **Fusoma rubricosa** Dearn. & Barth. sp. nov.

Minute, brown, elongate spots, 1 × .2 mm. indicate the points of infection of the host; red areas extending from these spots become confluent and impart their color to the leaf. Both sides are similarly reddened but the lower side is white-specked with the flake-like colonies of conidia. Conidia hypophyllous, hyaline, shuttle-shaped, 3 septate, 35–45 × 11–15 μ, subsessile or borne on short sporophores, 9–18 × 4–5 μ.

On living leaves of *Calamagrostis scabra* Presl., Glacier National Park, Mont., Aug., 1915, *E. T. Bartholomew.* Type collection, Fungi Columb. *5019.*

44. **Ramularia Clematidis** Dearn. & Barth. sp. nov.

Spots pallid, irregular, mostly bounded by the veinlets, paler when held to the light than the unaffected portions of the leaf, slightly reddened on the under side by the conidia. Hyphae short, on colorless, flattish bases. Conidia hyaline, having a reddish tint in the mass, continuous or 1-septate, 20–30 × 4–7 μ.

On living leaves of *Clematis ligusticifolia* Nutt., Billings, Mont., Aug., 1913, *E. T.* and *E. Bartholomew 5180.* Type collection, Fungi Columb. *5084.*

45. **Ramularia Ranunculi-Lyallii** Dearn. & Barth. sp. nov.

On the upper side of the leaf, small, irregularly-oblong spots mark the diseased parts. These bear on the lower side numerous acervuli of short sporophores supporting subfusoid, hyaline, continuous conidia, 15–22 × 2.5–4 μ; and finally becoming a dense, white mould-like layer. These spots may become confluent and the whole lobe or leaf sered.

On *Ranunculus Lyallii* (Gray) Ryd. Bremerton, Wash., July, 1912, *E. Bartholomew.* Victoria, B. C., April, 1915, *John Macoun.*

46. (?) **Cercosporella Aceris** Dearn. & Barth. sp. nov.

Extensive areas, dark-brown above, reddish-brown below, surrounded as seen when held up to the light by a greenish, translucent border, 1–2 mm. wide. Tufts of hyphae and sporules whitish, numerous, superficial, epiphyllous, consisting of long, slender, straight, hyaline, septate sporules 150–200 × 4 μ, intermixed with thick, short, septate hyalin offshoots from the same base, 15–50 × 6–10 μ.

Destructive to living leaves of *Acer macrophyllum* Ph., Duckabush, Wash., Aug., 1912, *E. Bartholomew 4817.* Type collection, Fungi Columb. *5005.*

47. (?) **Cercosporella Alni** Dearn. & Barth. sp. nov.

Slightly discolored areas sometimes extending over the whole leaf, hardly visible on the lower side unless held up to the light but well marked on the upper side by the numerous, whitish or yellowish tufts of hyphae and spores. These superficial tufts or masses consist of hyaline, straight, 2–5-septate sporules, 270–360 × 5–6 μ, intermixed with hyaline, relatively short offshoots 30–100 × 10–20 μ from the same base of globular or quadrate cells, 9–14 μ. The second form may develop into the first named, long, straight sporules. The oldest masses seem yellowish, waxy tubercles supporting numerous, long, hyaline sporules.

Destructive to living leaves of *Alnus rubra* Boug., Bremerton, Wash., Sept., 1912, *E. Bartholomew 4924.* Type collection,

Fungi Columb. *5006*. This may be only a host variety of the preceding or *vice versa*.

48. **Cercospora Streptopi** Dearn. & Barth. sp. nov.

Spots yellowish, irregularly oblong, 2–5 mm., bounded by the veinlets, becoming confluent and turning brown. Hyphae 15 μ, on pale, later becoming dark, tubercular bases, mostly hypophyllous. Conidia abundant, 20–63 × 5.5–6 μ, 1–7-septate; they and the fertile hyphae pinkish and imparting to the lower side of the leaf a decidedly pinkish hue.

On living leaves of *Streptopus amplexifolius* (L.) DC., Duckabush River, Wash., Aug., 1912, *E. Bartholomew 4857*. Type collection, Fungi Columb. *5004*.

49. **Helminthosporium repente** Dearn. & Barth. sp. nov.

Extensively creeping and proliferating over the bark,—dark, olive-brown hyphae 5–8 μ thick, cells 6–15 μ long; conidiophores or fertile branches, narrower and paler than the conidia and with longer cells. Conidia sub-oblong, 5–12-septate, dark-brown, nearly opaque throughout, horizontal or ascending, mostly 40–45 × 8–9 μ when mature, exceptionally reaching 60 μ in length, septa 4–6 μ apart.

On bark of dead *Acer grandidentatum* Nutt., Red Butte Canyon, Utah, June, 1913, *E. Bartholomew 5826*.

50. **Fusarium gleditsiaecolum** Dearn & Barth. sp. nov.

Sporodochia salmon-colored, white below the conidiophorous layer, erumpent through the cuticle, seated on the cortex which assumes a reddish tinge on the surface adjoining the wood. Sporules arcuate, hyaline, 1–3-septate, 30–45 × 3–4 μ on more or less branched conidiophores forming a layer 30–100 μ in depth.

On dead *Gleditsia triacanthos*, L., Stockton, Kansas, May, 1914, *E. Bartholomew 5554*.

F. scolecoides Sacc. & Ellis, which this resembles, has 5-septate sporules, 70–80 μ in length.

51. **Fusarium Macounii** sp. nov.

Sporodochia gregarious, whitish with carneous tinge, erumpent-superficial, depressed, irregularly circular to elliptic, walled

around by the ruptured epidermis, .3–.5 mm. in diam. Hyphae fasciculate on a pseudo-parenchymatic base; sporophores simple or more frequently branched, 2.5–3 μ thick. Conidia hyaline, straightish, terminal and solitary on the narrow branches of the sporophores, continuous to 3-septate, not constricted, 20–60 $\times$ 5–6.5 μ.

On dead maple bark (*Acer* sp.) Vancouver Island, August, 1916, *John Macoun, 1003*.

The conidia are larger and sporophores narrower than in *Fusarium illosporoides* Sacc., to which it is otherwise similar.

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